REMARKS

The present Amendment is in response to the Examiner's Office Action mailed May 7, 2003. Claims 1-17 are amended. New claims 18-19 are added. Claims 1-19 are now pending.

Reconsideration of the application is respectfully requested in view of the above amendments to the claims and the following remarks. For the Examiner's convenience and reference, Applicants' remarks are presented in the order in which the corresponding issues were raised in the Office Action.

1. Objection to Abstract

The Examiner objects to the abstract of the disclosure for being too long and for using phraseology often found in patent claims. Applicants delete the original abstract and replace it with a shorter one without using phraseology found in patent claims. Withdrawal of objection is therefore respectfully requested.

2. Rejections under 35 U.S.C. § 112, First Paragraph

Claims 1-17 stand rejected under 35 U.S.C. § 112, First Paragraph for failing to comply with the written description requirement.

Specifically, the Examiner alleges that the claimed method for screening for transcription factor modulators is not adequately described in the disclosure; and the disclosure does not describe a single or any transcription factors (tf) modulators that has been identified or screened by the method. Further, the Examiner alleges that the specification provides a library of transcription factor probes, not a library of modulators. Applicants respectfully traverse the Examiner's rejection based on the following reasons.

Applicants respectfully direct the Examiner's attention to pages 41-45 (Section entitled "Compound Screening for Drug Candidate"). This section describes ample examples of libraries of compounds or agents that are used in the screening for transcription factor modulators. In view of the description, one of ordinary skill in the art would appreciate that Applicants intended employ these libraries in the screening, and thus had possession of the claimed invention at the time application was filed. As described in this section, the ability of the claimed method to detect multiple activated transcription factors simultaneously confers great advantages in high throughput screening for agents that modulate transcription factor activities. As an illustration, Applicants have demonstrated that an agent, PMA (phorbol ester), was found to modulate transcription factor activities in cancer cells such as HeLa, A431, Jurkat, K-562, and Y79 cells.

See pages 53-55, sections 15-18. For example, as can be seen by comparing Figures 11A and 11B, a number of transcription factors including Ets and NF-E1 can be seen to have been activated at higher levels in the PMA-treated HeLa cells as compared to the HeLa cells not treated with PMA. Page 54, lines 1-3. Thus, the specification provides sufficient written description of the pluralities of agents that can be used to screen for transcription factor modulators.

The Examiner also alleges that the generalized statements in the specification are not an adequate written description of the invention; and there is not a single modulator that is described that influences a transcription factor activity, let alone, modulators that influence multiple different transcription factors at the same time. As discussed above, Applicants provide ample examples of the pluralities of agents that can be used to screen for transcription factor modulators. An example of such a modulator is PMA that has been demonstrated to selectively activate specific transcription factors in cancer cells.

In view of the detailed description and ample examples provided in the specification, Applicants submit that the claimed invention is adequately described to convey to one skilled in the relevant art that the inventors at the time the application was filed, had possession of the claimed invention under 35 U.S.C. §112, First Paragraph. Withdrawal of this ground of rejection is respectfully requested.

3. Rejections under 35 U.S.C. § 112, Second Paragraph

The Examiner rejects claims 1-17 under 35 U.S.C. § 112, Second Paragraph for being indefinite for failing to particularly point out and distinctly claims the subject matter which applicant regards as the invention.

a) Claim 1

The Examiner alleges that claim 1 is unclear as to whether a modulator or a transcription factor probes is being screened; and the preamble recites for screening a modulator, but the body recites for a library of tf probes.

Independent claim 1 as amended specifies a method for screening a transcription factor modulator. Support for the claim language "comparing …… the test sample with a control sample……", for example, appears in pages 53-55, sections 15-18, which describe the comparison of different profiles of transcription factors in cancer cells in the presence (i.e., a test sample) and absence (i.e., a control sample) of PMA. As recited in claim 1, different agents are tested for their abilities to modulate transcription factor activation in different samples of cells, and difference in their abilities is determined by comparing the treated and untreated samples, and

also by comparing the samples treated by different agents. Applicants submit that claim 1 as amended is sufficiently definite to one of ordinary skill in the art.

b) Claims 2-7

Claims 2-7 stand rejected for being indefinite in the recitation of 1-5% of the length of the recognition sequences. The Examiner alleges that it is not clear as to the standard or maximum length of the recognition sequence by which the percentage is based upon; and also, it is not clear as to the other different lengths included in the library.

The Examiner's forgoing objection is not understood by Applicants. For example, the open-ended range "at least 1%" contained in claim 2 is not indefinite simple because it is open-ended. One of ordinary skill in the art would understand that if 1% or more of the nucleic acid probes (e.g., 2 probes out of 100 probes in the library) contains the recognition sequences greater than 35 base pairs in length (e.g., 36 base pairs), it is within the scope of the claim 2. According to MPEP 2173.05(c)II, the court held that a composition claimed to have a theoretical content greater than 100% (i.e., 20-80% of A, 20-80% of B, and 1-25% of C) was not indefinite simply because the claims may be read in theory to include compositions that are impossible in fact to formulate. It was observed that subject matter which cannot exist in fact can neither anticipate nor infringe a claim. *In re Kroekel*, 504 F.2d 1143, 183 USPQ 610 (CCPA 1974). Thus, claims 2-7 containing the term "at least 1-5% are sufficiently definite to one of ordinary skill in the art. Withdrawal of the rejection under 35 U.S.C. § 112, Second Paragraph is therefore respectfully requested.

The Examiner also states that the preamble "A" should be amended to -The---since there is proper antecedent support in the base claims for the methods in each of the claims. Applicants amended the dependent claims to replace the "A" with "The" as suggested by the Examiner.

C.) Claims 8-9

The Examiner states that caims 8-9 are rejected for being indefinite as to the library having between 20 and 40 base pairs in length i.e., whether the libraries cover different recognition sequences of varying kind and length of sequences or of the same lengths.

Applicants amend claims 8 and 9 specify that each of the recognition sequences has the recited base pairs in length. Withdrawal of the rejection is therefore respectfully requested.

d) Claims 10-15

Claims 10-15 are indefinite as to the metes and bounds of "at least" different DNA recognition sequences i.e., the maximum kind and length of DNA sequences contained in the library.

As discussed above, the claims containing an open-ended range is not indefinite simply because it is open-ended. For example, claim 10 simply means that if the library contains 5 or more different recognition sequences, it falls within the scope of the claim. The Examiner bears the burden of showing why one of ordinary skill in the art would not understand the meaning of the claim language. Absent objective evidence showing such, rejection of claims 10-15 should be withdrawn.

e) Claim 17

The Examiner states that "the binding regions" in claims 17 lack antecedent basis of support from the base claim. In view of the amendment to claim 17, withdrawal of the rejection is respectfully requested.

4. Rejection under 35 U.S.C. § 102(b)

The Examiner rejects claims 1-17 rejected under 35 U.S.C. §102(b) as being anticipated by Weissman et al. (U.S. Patent No. 6,066,452).

Independent claims as amended specifies a method for screening a transcription factor modulator by comparing multiple different transcription factors in cell samples treated with or without any of the different agents. Specifically, the presence of the multiple different transcription factors in the cell samples is detected by using a library of nucleic acid probes each of which comprises a predetermined, **known** recognition sequence to identify transcription factors in the sample that are known to bind to the recognition sequences. Support for the claims language appears, for example, in the specification at page 16, lines 29-31 and page 17, lines 1-11.

In contrast, Weissman et al discloses a method for identifying new pairs of transcription factor-DNA binding sites by using a library of nucleic acid probes with **randomized** sequences. Column 2, lines 4-15. Specifically, Weissman et al. teaches using a library of oligonucleotide probes having randomized sequences –NNNNNNNNN- (column 12, line 49) to "fish out" transcription factors that can bind to any of the randomized DNA sequences (column 13, Table 3). Thus, Weissman fails to teach or suggest using a library of nucleic acid probes each of which comprises a predetermined, **known** recognition sequence to identify transcription factors in the sample that are known to bind to the recognition sequences.

In view of the distinct differences between claimed method and that disclosed in Weissman et al., the cited reference fails to anticipate the claimed invention under 35 U.S.C. §102(b). Withdrawal of the rejection is therefore respectfully requested.

5. Obviousness-Type Double Patenting

Claims 1-17 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-71 of co-pending Application No. 09/877,243 ('243 application) or claims 1-31 of co-pending application No. 09/947,274 ('274 application).

Applicants disagree with the Examiner that the claimed invention is not patentably distinct from the co-pending applications ('243 and '274). However, to expedite the prosecution, Applicants submit herewith two terminal disclaimers over the '243 and '274 applications, respectfully. Withdrawal of the rejection is therefore respectfully requested.

CONCLUSION

In light of the remarks and arguments set forth above, Applicants earnestly believe that are entitled to a letters patent, and respectfully solicit the Examiner to expedite prosecution of this patent application to issuance. Should the Examiner have any questions, the Examiner is encouraged to telephone the undersigned.

Respectfully submitted,

Date: Sept. 8, 2003 By: _____

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